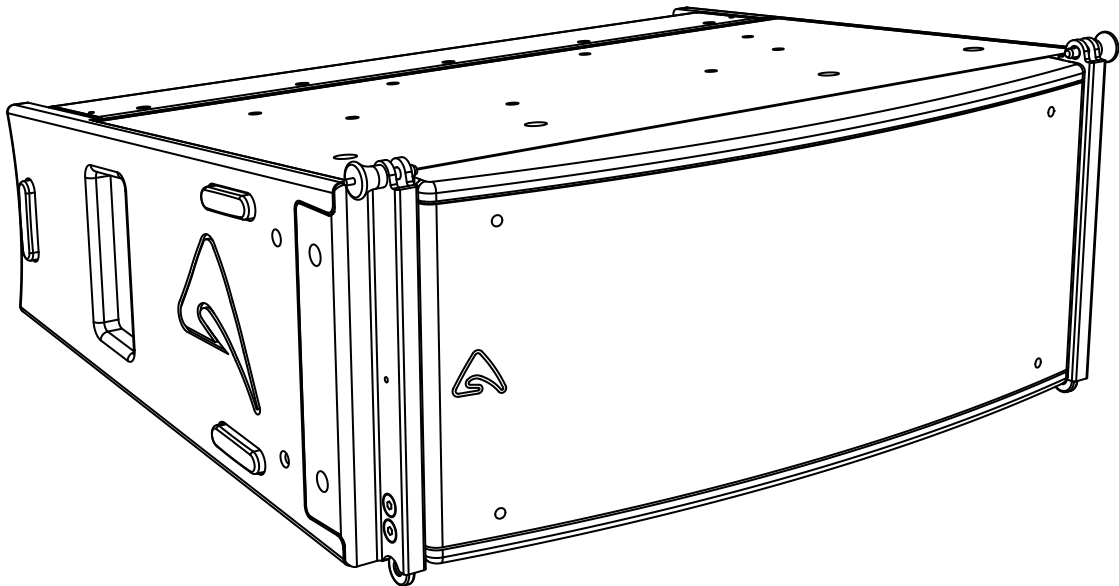




AX2065P

Passive Vertical Array Loudspeaker



USER MANUAL

revision 2023-07-19





IMPORTANT SAFETY INSTRUCTIONS

Watch for these symbols:



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Warning: to reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
17. To completely disconnect this apparatus from the ac mains, disconnect the power supply cord plug from the ac receptacle.
18. The mains plug of the power supply cord shall remain readily operable.
19. This apparatus contains potentially lethal voltages. To prevent electric shock or hazard, do not remove the chassis, input module or ac input covers. No user serviceable parts inside. Refer servicing to qualified service personnel.
20. The loudspeakers covered by this manual are not intended for high moisture outdoor environments. Moisture can damage the speaker cone and surround and cause corrosion of electrical contacts and metal parts. Avoid exposing the speakers to direct moisture.
21. Keep loudspeakers out of extended or intense direct sunlight. The driver suspension will prematurely dry out and finished surfaces may be degraded by long-term exposure to intense ultra-violet (UV) light.
22. The loudspeakers can generate considerable energy. When placed on a slippery surface such as polished wood or linoleum, the speaker may move due to its acoustical energy output.
23. Precautions should be taken to assure that the speaker does not fall off a stage or table on which it is placed.
24. The loudspeakers are easily capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.



DECLARATION OF CONFORMITY



The product is in compliance with:

RoHS Directive 2011/65/EU and 2015/863/EU, WEEE Directive 2012/19/EU.



The product is in compliance with:

S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

LIMITED WARRANTY

Proel warrants all materials, workmanship and proper operation of this product for a period of two years from the original date of purchase. If any defects are found in the materials or workmanship or if the product fails to function properly during the applicable warranty period, the owner should inform about these defects the dealer or the distributor, providing receipt or invoice of date of purchase and defect detailed description. This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse. Proel S.p.A. will verify damage on returned units, and when the unit has been properly used and warranty is still valid, then the unit will be replaced or repaired. Proel S.p.A. is not responsible for any "direct damage" or "indirect damage" caused by product defectiveness.

- This unit package has been submitted to ISTA 1A integrity tests. We suggest you control the unit conditions immediately after unpacking it.
- If any damage is found, immediately advise the dealer. Keep all unit packaging parts to allow inspection.
- Proel is not responsible for any damage that occurs during shipment.
- Products are sold "delivered ex warehouse" and shipment is at charge and risk of the buyer.
- Possible damages to unit should be immediately notified to forwarder. Each complaint for package tampered with should be done within eight days from product receipt.

CONDITIONS OF USE

Proel do not accept any liability for damage caused to third parties due to improper installation, use of non-original spare parts, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards. Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. The product must be installed by qualified personal. Please contact the manufacturer for further information.



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INTRODUCTION

The AX2065P Vertical Line Array element is designed for a wide range of sound reinforcement applications where a flexible and easy to use vertical array systems is needed. The AX2065P has been designed both for rental live sound applications and for fixed installations and has been engineered for the simplest use possible but without sacrificing anything in sound quality and performance.

The high frequency range is reproduced by a low-distortion compression driver, equipped with very light-weight Titanium diaphragms and a special new suspension design for very natural sound. A transmission line wave-forming waveguide has been used to load the HF driver, in order to provide a detailed and natural sound and to achieve a long-distance HF projecting capacity.

The two 6.5" woofers employed in the reproduction of the mid-bass range are equipped with very light-weight cones and rubber suspension to extend the low frequency response. The lightness of the diaphragm is furthermore improved by the use of aluminium voice coil instead of conventional copper. This ensure a fast reproduction of the mid range and of mid-bass musical passages, improving also the thermal capacity of the voice coil and, consequently, controlling the overall power compression. The two 6.5" woofers are back loaded by a short hybrid transmission line that minimizes the effect of the box resonances and eliminates the "boxy" mid-bass sound commonly obtained from regular bassreflex enclosures. The crossover filter approach is based on a "Constant Power" technique. Thanks to a particular phase combination between the two ways around the crossover frequency, this approach is able to provide a very stable horizontal coverage and a very stable off-axis sound image, also minimizing unwanted effects around the crossover frequency. The further application of phase linearization techniques, combined to constant power crossover, yield a linear phase response and a coherent time response. This allows for a natural perception of acoustic instruments and voices and for an improved depth of the sound image.

TECHNICAL SPECIFICATION

SYSTEM

System's Acoustic Principle	Line Array Element Short Transmission Line LF Back Loading Acoustic Transmission Line HF Waveguide
Frequency Response (±3dB)	80 Hz – 18 KHz (Processed)
Nominal Impedance	8Ω (LF) + 8Ω (HF)
Minimum Impedance	7.2 Ω @ 340Hz (LF); 7Ω @ 2.5kHz (HF)
Horizontal Coverage Angle	110° (-6dB)
Vertical Coverage Angle	12° (-6dB)
Sensitivity (2.83 V @ 1m, 2 Pi)	99 dB _{SPL} (LF); 108 dB _{SPL} (HF)
Maximum Peak SPL @ 1m	129 dB

TRANSDUCERS

LF	Two 6.5" (165 mm), 1.5" (38 mm) aluminium voice coil, 16Ω each, paralleled
HF	One 1.4" drivers, 2.5" (64 mm) edgewound voice coil, titanium diaphragm, 8Ω

INPUT CONNECTION

Connector Type	Neutrik® Speakon® NL4 x 2
Input Wiring	LF = Pin 1+/1-; HF = Pin 2+/2-

POWER HANDLING

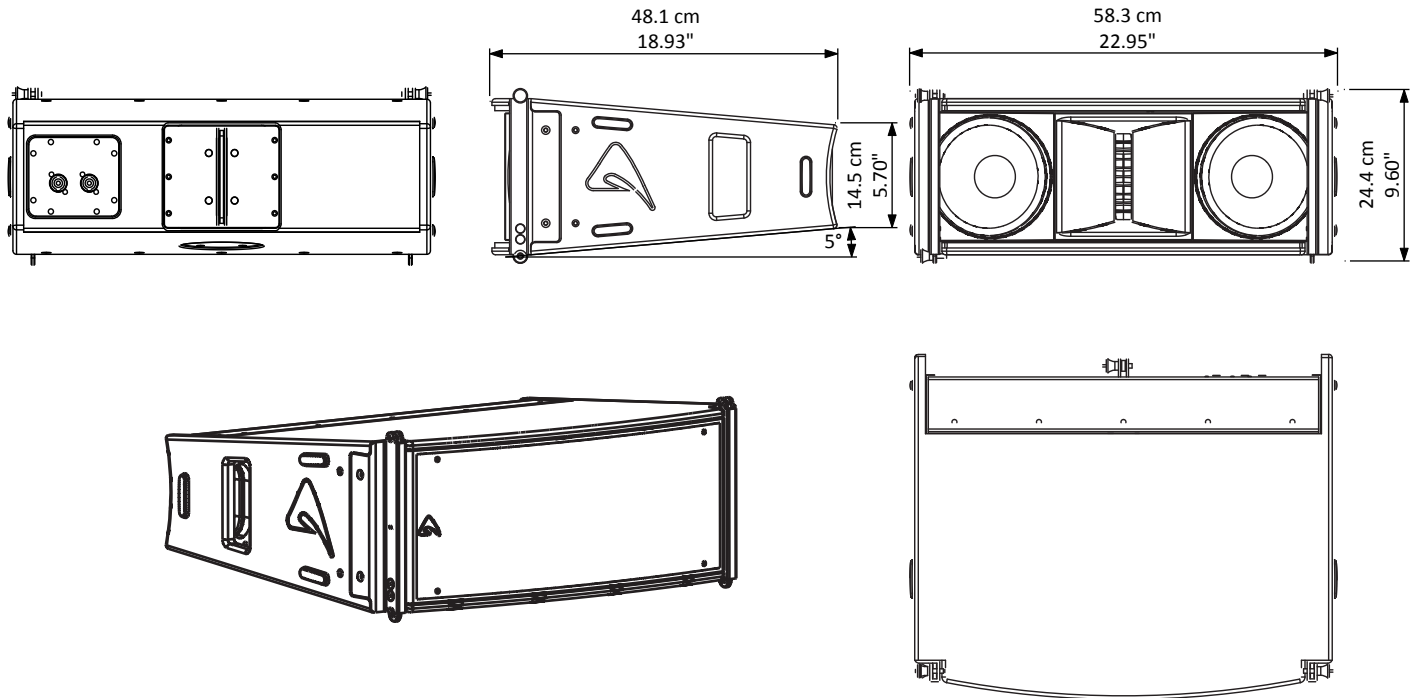
Continuous AES Pink Noise Power	400 W (LF) + 75 W (HF)
Program Power	800 W (LF) + 150 W (HF)
LF Power Compression	@ -10 dB Power (70 W) = 0.7 dB @ -3 dB Power (350 W) = 1.8 dB @ 0 dB Power (700 W) = 3.5 dB

ENCLOSURE & CONSTRUCTION

Dimensions (W x H x D)	583 mm (22.95") x 244 mm (9.60") x 481 mm (18.93")
Taper angle	5°
Construction	15 mm, reinforced Phenolic Birch
Paint	High resistance, water based paint
Front Suspension	Aluminium Fast Link structure
Back Suspension	High Strength Steel
Net Weight	19.2 Kg (42.32 lbs.)



MECHANICAL DRAWING



OPTIONAL ACCESSORIES

AXCASE05	Carrying Case for 4 box unit + Flying Bar	KPTSW215	Fly bar for Axiom AX2065 and SW215 Loudspeakers
AXCASE06	Carrying Case for 4 box unit	KPTAX2065	Fly bar for 6 MAX Axiom AX2065 Loudspeakers only
NL4FXX-W-L	Neutrik Speakon® PLUG for OD 10-16mm	AXFEETKIT	Kit Of 6pcs BOARDACF01 M10 foot for stacked installation
AX2065A	Active vertical array loudspeaker	KPAX265	Pole Adaptor
SW215P	Passive Subwoofer	KP010	0° to 10° tilt adaptor
SW215FP	Flyable Passive Subwoofer	DHSS10M20	Sub-Speaker ø35mm Pole with M20 screw
PC260	2 in 6 out digital loudspeaker processor	RAINCOV2065	Rain cover for input sockets
USB2CANDV2	Dual output PRONET network converter		

see <http://www.axiomproaudio.com> for detailed description and other available accessories.

SPARE PARTS

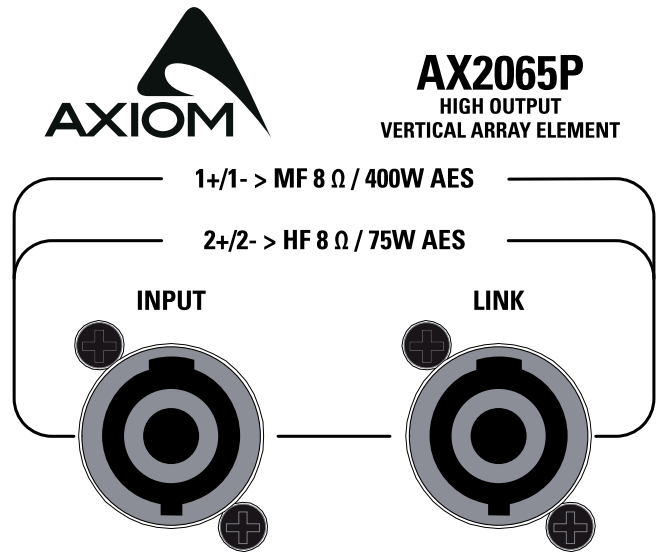
NL4MP	Neutrik Speakon® panel socket
94SPI2265	Locking Pin for AX2265
PLG716	Straight Shackle 16 mm for Fly bar
91CRAIN3	Crossover/protection module
98AXM6W16	6.5" woofer - 1.5" VC - 16Ω
98DRI2065	1.4" compression driver - 2.4" VC - 8Ω
98MBN2065	titanium diaphragm for 98DRI2065 HF driver



INPUT

Power input for the external amplifier. The AX2065P does not include a passive crossover for filtering the signal, but only an internal protection that applies a gentle high-pass filtering and a limitation for excessive power on the HF section. The connections are the following:

INPUT - LINK	
NL4 pin number	internal connection
1+	LF+
1-	LF-
2+	HF+
2-	HF-



LINK

Power output in parallel with the INPUT socket for connecting the unit to another speaker. The number of AX2065P cabinets that can be connected in parallel depends on the amplifier load capacity.

 **WARNING: In case of using the AX2065P passive module linked with an AX2065A active module DO NOT LINK ANY OTHER AX2065P.**

Useful tools to set up properly a vertical array system

This is a list of tools that can be very useful to set properly a vertical array system.



CABLE TESTER

It is a good practice to check all cables before each installation, because even one faulty cable can compromise heavily the system performance.



INCLINOMETER WITH LEVER

This tool can be used to verify the vertical array angle. It can be used at the top or at the bottom of the array. In this case you have to sum all splay angles, so the maximum precision is needed for aiming the vertical array, particularly for long throw applications.



LASER DISTANCE METER

This instrument can be useful to measure the height of the vertical array and to know the distance between FOH-Subs and FOH-Array for setting the delay time.



SMAART or similar acoustic measurement system

These are useful to measure delays, phase and response of the system.



PREDICTION SOFTWARE: EASE FOCUS 3

To aim correctly a complete system we suggest to use always the Aiming Software - EASE Focus 3:

The EASE Focus 3 Aiming Software is a 3D Acoustic Modelling Software that serves for the configuration and modelling of Line Arrays and conventional speakers close to reality. It only considers the direct field, created by the complex addition of the sound contributions of the individual loudspeakers or array components.

The design of EASE Focus is targeted at the end user. It allows the easy and quick prediction of the array performance in a given venue. The scientific base of EASE Focus stems from EASE, the professional electro- and room acoustic simulation software developed by AFMG Technologies GmbH. It is based on the EASE GLL loudspeaker data file required for its use. The GLL file contains the data that defines the Line Array with regard to its possible configurations as well as to its geometrical and acoustical properties.

 **Download the EASE Focus 3 app from the AXIOM website at <https://www.axiomproaudio.com/> clicking on downloads section of the product.**

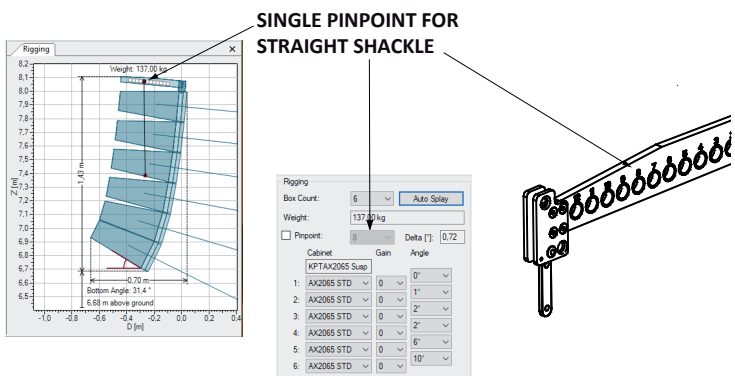
Use the menu option **Edit / Import System Definition File** to import the **GLL** file, the detailed instructions to use the program are located in the menu option **Help / User's Guide**.

Note: Some windows system can require the .NET Framework 4 that can be download from website at <https://focus.afmg.eu/>.

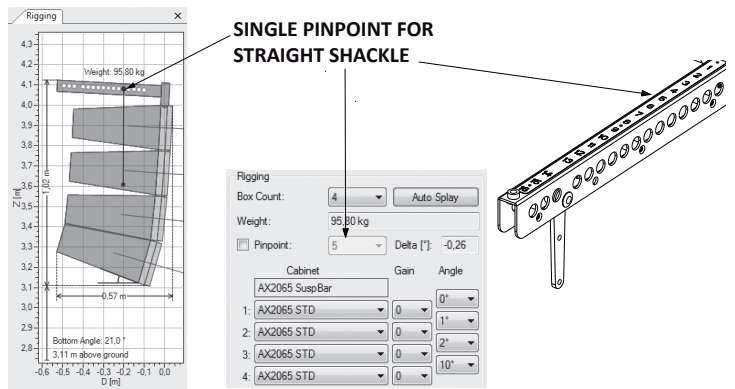
BASIC INSTALLING OPERATION

The EASE FOCUS prediction software is the tool that allows you to evaluate your installation both to meet the acoustic requirements of the project and also to suspend or stack AX2065 systems, the program allows you to simulate the rigging pinpoint on the fly bar to obtain the calculated splay angle of the entire line array system and of the individual angles between each loudspeaker element.

KPTAX2065 FLOWN PINPOINT



KPTSW215 FLOWN PINPOINT




The following examples shows how to operate correctly to link the loudspeaker box and to suspend or stack the whole system safely and surely, read these instructions with extreme attention:

 **WARNING! CAREFULLY READ THE FOLLOWING INSTRUCTIONS AND CONDITION OF USE:**

- This loudspeaker is designed exclusively for Professional audio applications. **The product must be installed by qualified personal only.**
- Proel strongly recommends that this loudspeaker cabinet be suspended taking into consideration all current National, Federal, State and Local regulations. Please contact the manufacturer for further information.
- Proel do not accept any liability for damage caused to third parties due to improper installation, lack of maintenance, tampering or improper use of this product, including disregard of acceptable and applicable safety standards.
- During assembly pay attention to the possible risk of crushing. Wear suitable protective clothing. Observe all instructions given on the rigging components and the loudspeaker cabinets. When chain hoists are in operation ensure that there is nobody directly underneath or in the vicinity of the load. Do not under any circumstances climb on the array.
- **Wind loads**

When planning an open-air event it is essential to obtain current weather and wind information. When loudspeaker arrays are flown in an open-air environment, possible wind effects must be taken into account. Wind load produces additional dynamic forces acting on the rigging components and the suspension, which may lead to a dangerous situation. If according to the forecast wind forces higher than 5 bft (29-38 Km/h) are possible, the following actions have to be taken:

- The actual on-site wind speed has to be monitored permanently. Be aware that wind speed typically increases with height above ground.
- Suspension and securing points of the array should be designed to support double the static load in order to withstand any additional dynamic forces.

 **WARNING!** **Flying loudspeakers overhead at wind forces higher than 6 bft (39-49 Km/h) is not recommended.** If the wind force exceeds 7 bft (50-61 Km/h) there is a risk of mechanical damage to the components which may lead to a dangerous situation for persons in the vicinity of the flown array.

- **Stop the event and make sure that no person remains in the vicinity of the array.**
- **Lower and secure the array.**



Fly bar suspension and angle setup (centre of gravity)

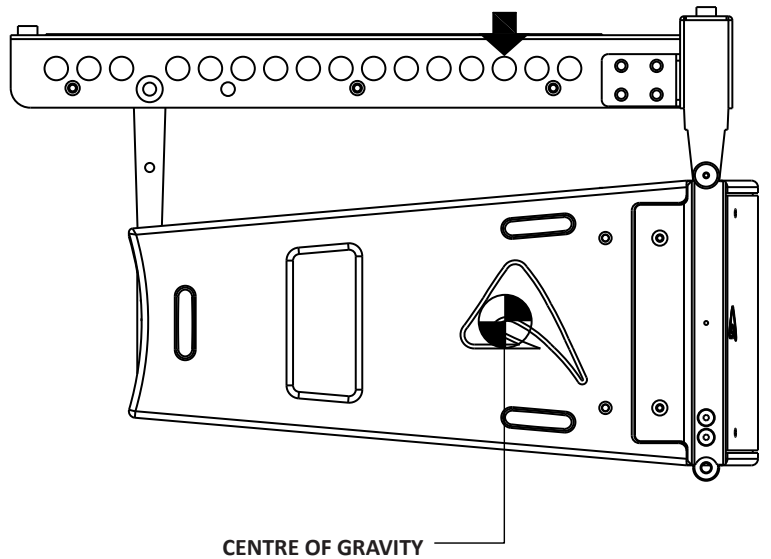
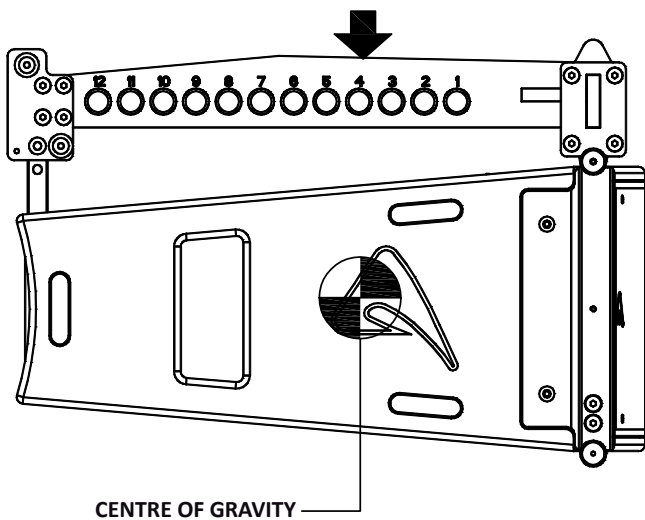
The figures below show where the normal centre of gravity is with one box or several boxes arranged in a line. Usually the boxes are arranged to make an arc for the best coverage of the audience, so the center of gravity moves backward. The aiming software suggests the ideal suspension pinpoint taking into account this behaviour: fix the straight shackle in this position.

Note that the ideal aiming angle often doesn't correspond to the pinpoint: there is often a little difference between ideal aiming and real aiming and its value is the Delta angle: positive delta angle can be adjusted a little using two ropes, negative delta angle are self adjusted a little because the cables weigh on the back of the array. With some experience it's possible to consider preventively these required little adjustments.

During the flown set up you can connect the elements of the array to their cables. We suggest to discharge the weight of the cables from the flying pinpoint by tying them with a textile fibre rope, instead of letting them hang freely: in this way the position of the array will be much more similar to the simulation produced by the software.

KPTSW215 FLY BAR FOR FLOWN ARRAY

KPTAX2065 FLY BAR FOR FLOWN ARRAY

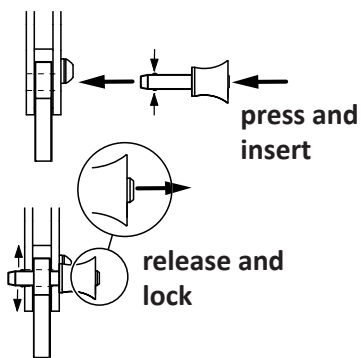


Pin locking and splay angles set up

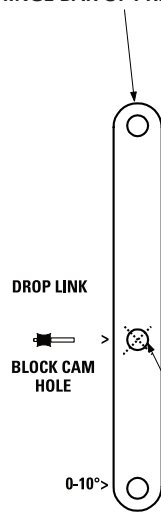
The figures below shows how to insert correctly the locking pin, always carefully check that each pin is fully inserted and locked in the correct position. Set up the splay angle between loudspeakers inserting the pin in the correct hole, please note that the inner holes in the hinge top are for even angles (2, 4, 6 etc.) while the outer holes are for the odd angles (1, 3, 5 etc.).

LOUDSPEAKER SPLAY ANGLES SET UP

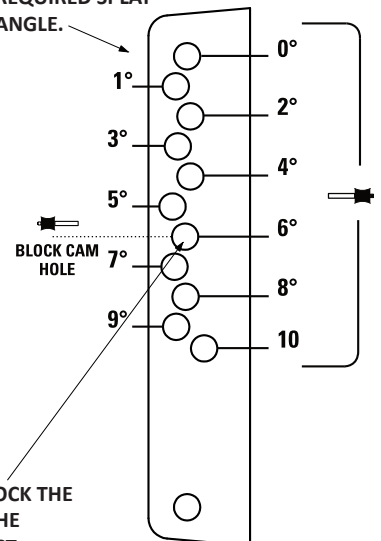
94SPI2265 LOCKING PIN



HINGE BAR OF PREVIOUS BOX



LOCK THE PIN IN THE HOLE TO OBTAIN THE REQUIRED SPLAY ANGLE.



USE THIS HOLE TO LOCK THE HINGE BAR WHEN THE LOUDSPEAKER IS REST

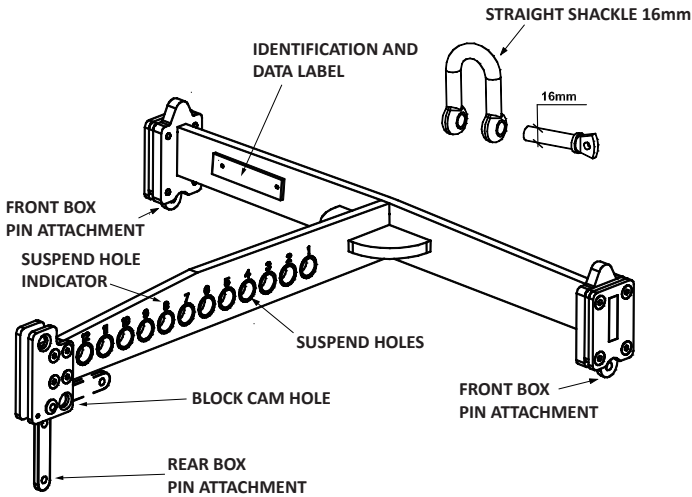


FLY BAR AND ACCESSORIES

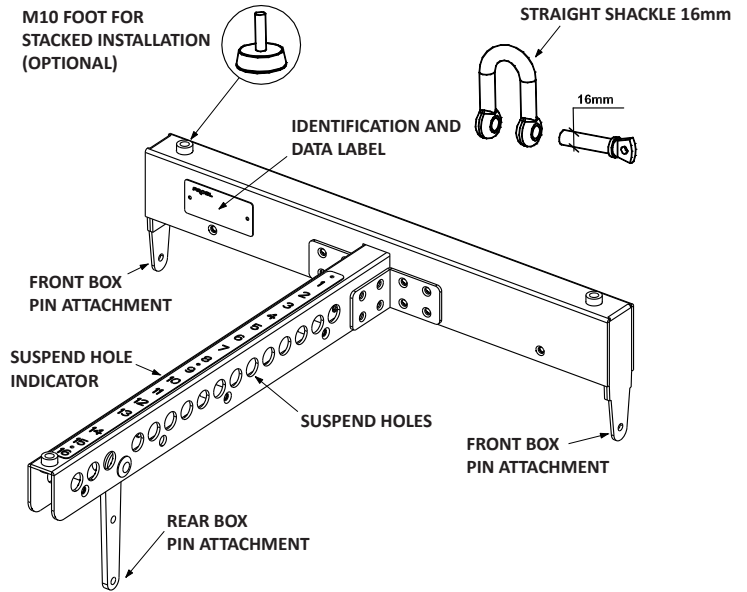
The AX2065 Systems are built to allow the suspension of array with variable shape and dimensions. Thanks to a suspension mechanism designed to be functional, flexible and safe, each system must be suspended or stacked using the **KPTSW215** or **KPTAX2065** fly bar. The loudspeakers are linked together in a column using a series of couplers integrated in the frame of each enclosure. Each system is set up properly both acoustically and mechanically only using the aiming software.

Coupling system in the front does not require any adjustment: using two locking pins, each loudspeaker box is fixed to the previous. The slotted bar in the back is inserted in a U-shaped frame which features a series of numbered holes. Sliding the slotted bar in the U-shaped frame of the next loudspeaker and inserting a locking pin in one of the numbered holes, it is possible to adjust the relative splay angle between two adjacent loudspeakers in the array column.

KPTAX2065 FLY BAR AND ACCESSORIES



KPTSW215 FLY BAR AND ACCESSORIES



KPTAX2065 fly bar maximum capacity is 200 Kg (441 lbs) with the 0° angle. It can support, with a safety factor of 10:1, up to:

- 6 AX2065 active or passive (flybar from 0° to 10°)

KPTAX2065 can NOT be used for stacked array.



KPTSW215 fly bar maximum capacity is 540 Kg (1190 lbs) with the 0° angle. It can support, with a safety factor of 10:1, up to:

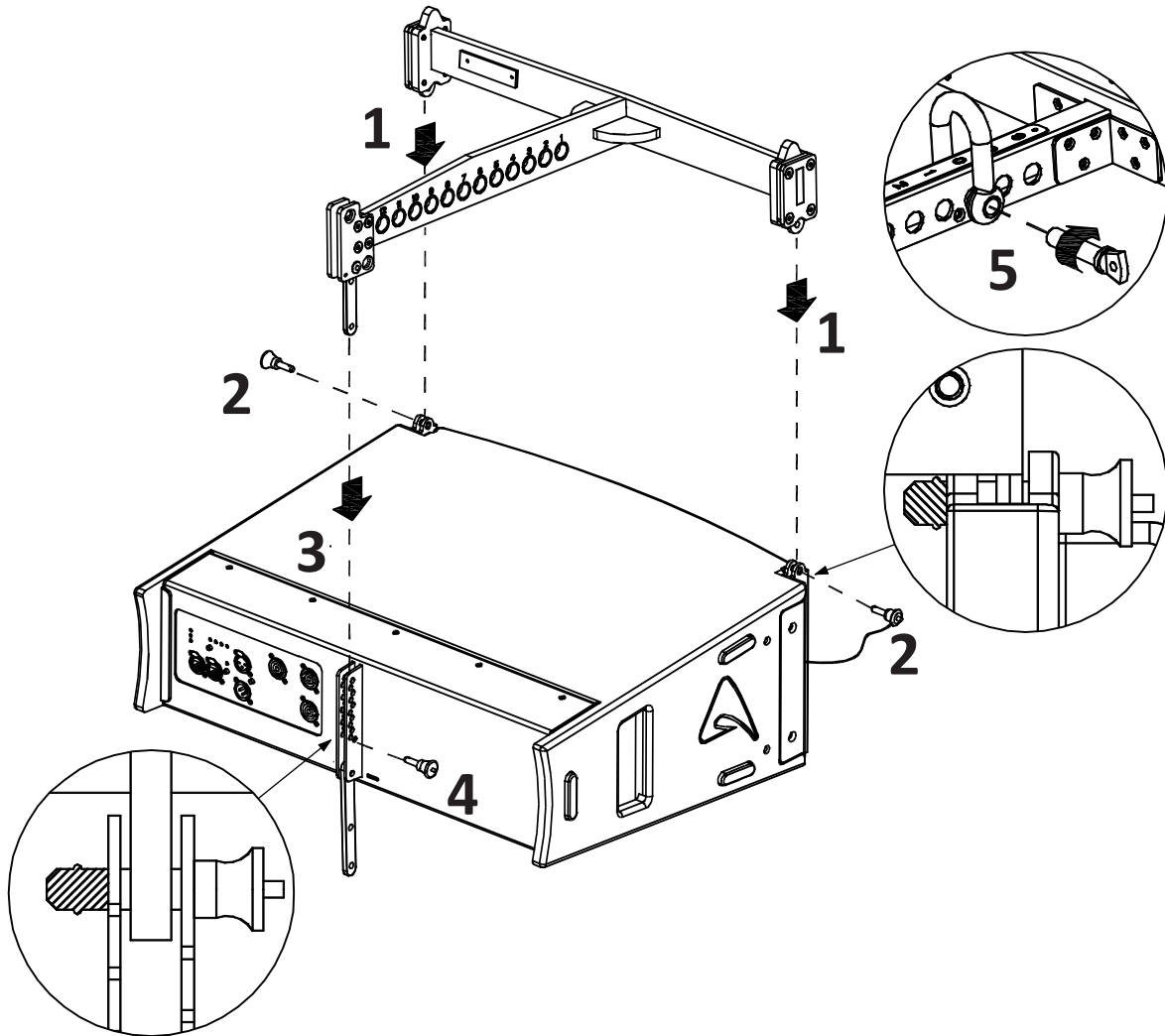
- 8 AX2065A + 8 AX2065P (flybar from 0° to 10°)
- 12 AX2065A (flybar from 0 to 10°)
- 2 SW215AF + 4 AX2065A + 4 AX2065P (flybar at 0°)
- 2 SW215AF + 8 AX2065A (flybar at 0°)
- 6 SW215AF (flybar from 0° to 5°)

KPTSW215 can be used for stacked array, see further on this manual.



Follow the sequence in the figure for fixing the fly bar at the first box. Usually this is the first step before lifting up the system. Be careful to insert properly all the locking pins (2)(3) and the shackle (5) in the right holes as specified by the aiming software. When lifting the system always proceed gradually step by step, paying attention to secure the fly bar to the box (and the box to the other boxes) before pulling up the system: this makes easier to insert properly the locking pins. Also when the system is released down, unlock gradually the pins. During the lifting be very careful to not let the cables enter the space between one enclosure and the other, as their compression could cut them.

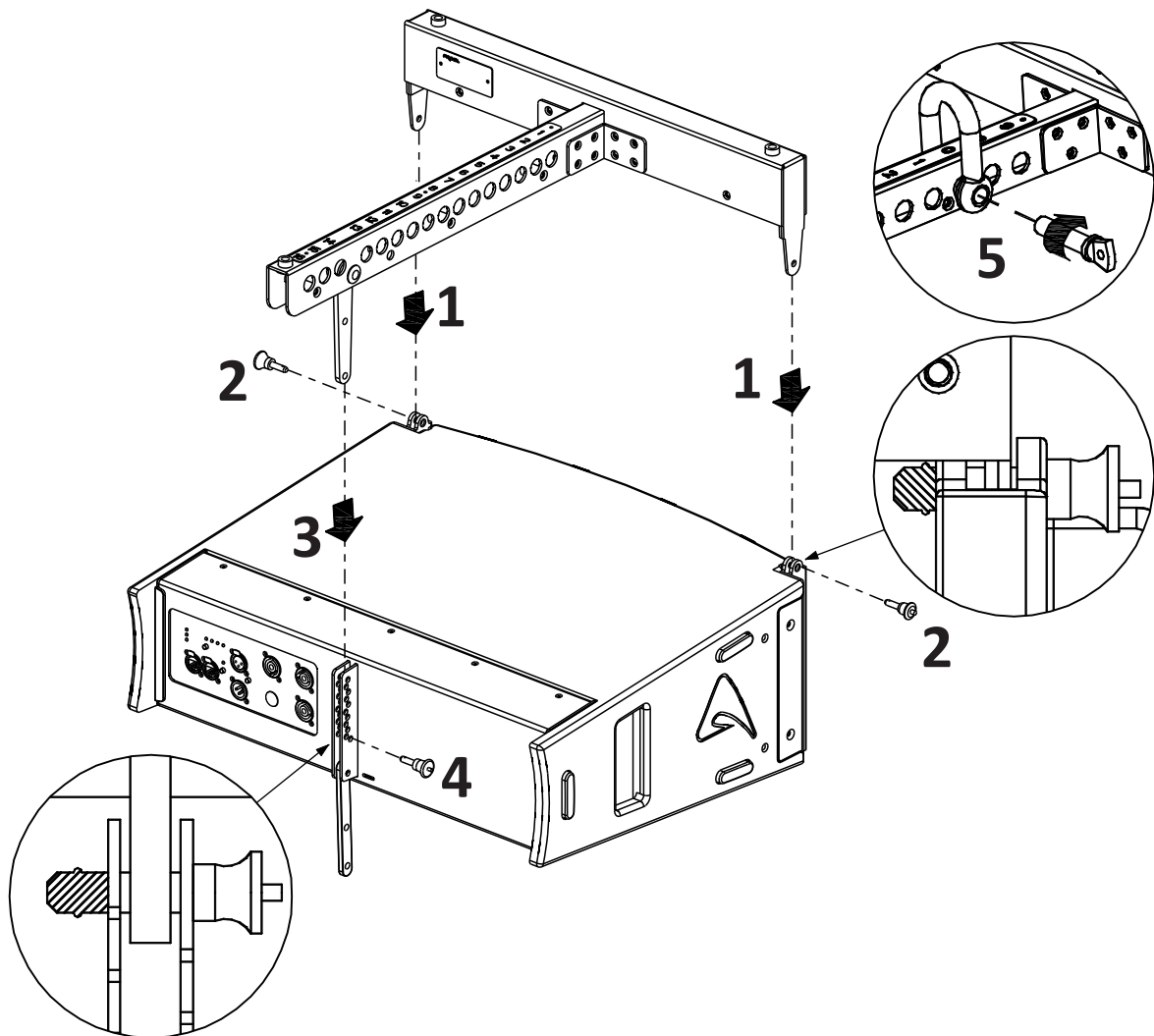
KPTAX2065 FLY BAR ASSEMBLY SEQUENCE





Follow the sequence in the figure for fixing the fly bar at the first box. Usually this is the first step before lifting up the system. Be careful to insert properly all the locking pins (2)(3) and the shackle (5) in the right holes as specified by the aiming software. When lifting the system always proceed gradually step by step, paying attention to secure the fly bar to the box (and the box to the other boxes) before pulling up the system: this makes easier to insert properly the locking pins. Also when the system is released down, unlock gradually the pins. During the lifting be very careful to not let the cables enter the space between one enclosure and the other, as their compression could cut them.

KPTSW215 FLY BAR ASSEMBLY SEQUENCE





STACKED INSTALLATION

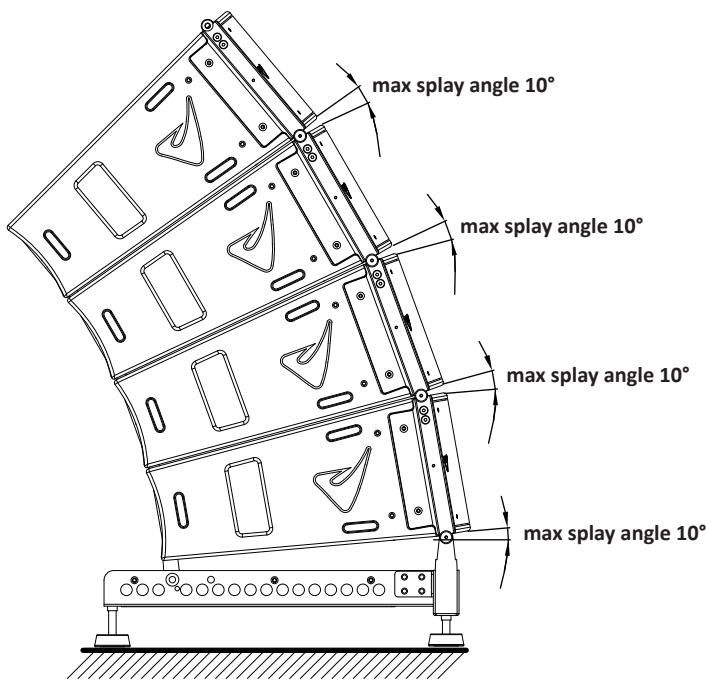


WARNING!

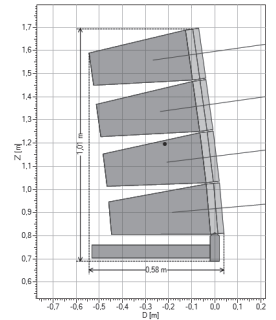
- The ground where the **KPTSW215** Fly bar serving as ground support is placed needs to be absolutely stable and compact.
- In the stack configuration you have to use the three optional feet **BOARDACF01 (AXFEETKIT kit)** and the fly bar must be mounted upside down on the ground.
- Adjust the feet so to lie the bar perfectly horizontal.
- Always secure ground stacked setups against movement and possible tipping over.
- A maximum of **4 x AX2065** cabinets with the **KPTSW215** Fly bar serving as ground support are allowed to be set up as ground stack.

Coupling system in the front do not require any adjustment: using two locking pins each loudspeaker box is fixed to the previous. The slotted bar in the back is inserted in a U-shaped frame which features a series of numbered holes. Sliding the slotted bar in the U-shaped frame of the next loudspeaker and inserting a locking pin in one of the numbered holes, it is possible to adjust the relative splay angle between two adjacent loudspeakers in the array column. The optimal splay angles can be simulated using the EASE Focus 3 software.

KPTSW215 STACKED ARRAY



System:	AXIOM AX Series
Company:	PROEL S.p.A.
Label:	AXIOM AX Series
Position:	X=0.00 m Y=0.00 m Z=0.80 m
Orientation:	Hor=0.0° Ver=0.0°
Weight:	96,00 kg
Setup:	AX2065 StackBar
Box Count:	4
Pinpoint Mode:	No Pinpoint



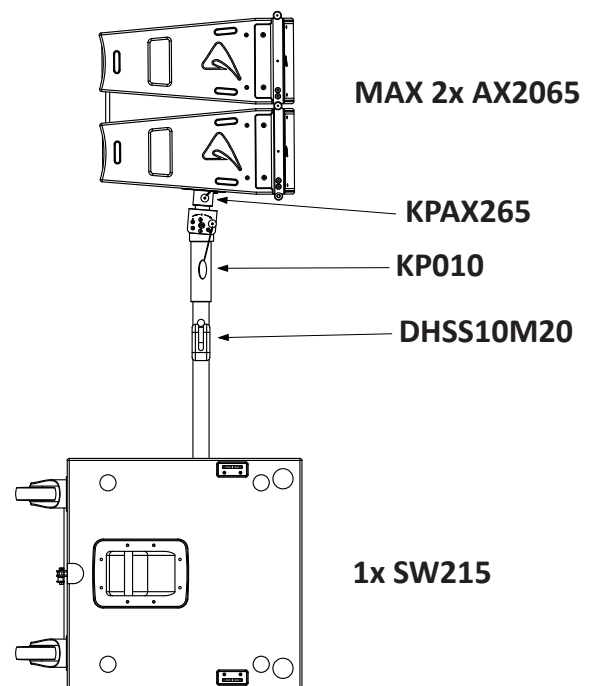
Box	Box Type	Gain	Rigging Angle	Aiming Angle
Box 4	AX2065 STD	0.0 dB	0°	8.0°
Box 3	AX2065 STD	0.0 dB	1°	8.0°
Box 2	AX2065 STD	0.0 dB	2°	7.0°
Box 1	AX2065 STD (Frame)	0.0 dB	5°	0.0°

PRESET USING EXAMPLE: STANDARD INSTALLATION

In the following figure you can see how to set up a standard audio system using the minimal configuration consisting of 2 AX2065 box and a sub.

In this case some optional accessories are required: 1x KPAX265, 1x KP10, 1x DHSS10M20 for each system. The AX2065 box preset must be used is the DOWN FILL/SINGLE BOX.

AX2065 used as conventional system





SYSTEM PROCESSING BASIC INSTRUCTIONS

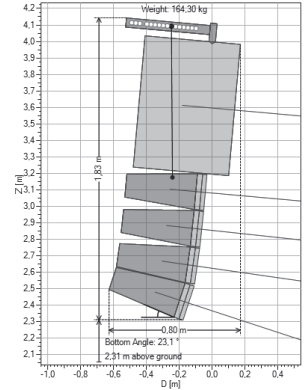
The AX2065P system does not feature passive filters so it needs an external processor to take care of the filtering, the time alignment and the speaker protection. For the system's processing **PROEL PC260 digital loudspeaker processor** must be used, loaded with dedicated presets for the correct system operation, which offer the best starting point for setting the time alignment, the gain and the equalization. For detailed instructions about the use of PC260 refer to its user's manual. **The presets can be download from the AXIOM web site in the AX2065P download section.**

STANDARD PRESET: 2065_4+1_ST01.pcf

This PRESET is suitable for vertical flown arrays that may range from 4 to 8 boxes or for the centre region of a bigger flown array. It can be used also for stacked arrays.

NOTE: in this preset the subwoofer SW215P is placed at the top of the flown array, in case the sub is placed on ground an additional delay time must be considered (read the PC260 OUT section further in this manual).

System:	AXIOM AX Series
Company:	PROEL S.p.A.
Label:	AXIOM AX Series
Position:	X=0.00 m Y=0.00 m Z=4.00 m
Orientation:	Hor=0.0° Ver=-5.1°
Weight:	164,30 kg
Setup:	SW215 SuspBar
Box Count:	5
Pinpoint Mode:	Best Pinpoint
Pinpoint Number:	7
Remaining Vertical Angle:	0,4°
Bottom Angle:	23,1°
Above Ground:	2,31 m

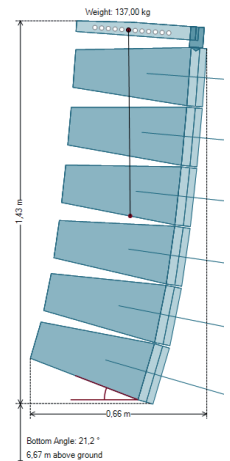


	Box Type	Gain	Rigging Angle	Aiming Angle
	(Frame)			-5.1°
Box 1	SW215F	0.0 dB	0°	-5.1°
Box 2	AX2065 STD	0.0 dB	0°	-5.1°
Box 3	AX2065 STD	0.0 dB	1°	-6.1°
Box 4	AX2065 STD	0.0 dB	2°	-8.1°
Box 5	AX2065 STD	0.0 dB	10°	-18.1°

LONG THROW PRESET: 2065_4+1_LT01.pcf

This PRESET can be used in arrays bigger than 6 or 8 boxes and loaded in the top 1 or 2 boxes in order to obtain a more even distribution of the sound pressure, especially if they point very far away or to the upper deck of a large theatre.

System:	AXIOM AX Series
Company:	PROEL S.p.A.
Label:	AXIOM AX Series
Position:	X=10,00 m Y=0,00 m Z=8,00 m
Orientation:	Hor=0,0° Ver=-4,3°
Weight:	137,00 kg
Setup:	KPTAX2065 Susp
Box Count:	6
Pinpoint Mode:	Best Pinpoint
Pinpoint Number:	7
Remaining Vertical Angle:	0,5°
Bottom Angle:	21,2°
Above Ground:	6,67 m



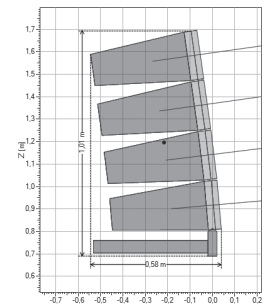
	Box Type	Gain	Rigging Angle	Aiming Angle
	(Frame)			-4,3°
Box 1	AX2065 LT	0,0 dB	0°	-4,3°
Box 2	AX2065 STD	0,0 dB	1°	-5,3°
Box 3	AX2065 STD	0,0 dB	1°	-6,3°
Box 4	AX2065 STD	0,0 dB	2°	-8,3°
Box 5	AX2065 STD	0,0 dB	3°	-11,3°
Box 6	AX2065 STD	0,0 dB	5°	-16,3°

SINGLE/DOWN-FILL PRESET: 2065_4+1_SD01.pcf

This PRESET, which features a much smoother high frequency response, can be loaded in the bottom boxes (usually 1 or 2 boxes) of a large flown array, in order to reach conveniently the audience close to the stage. It can be used also for the conventional system consisting 1x SW215P at ground and 2x AX2065P on pole.

This preset could be very useful also when the box is used just on its own as a Front Fill element in the front of very large stages.

System:	AXIOM AX Series
Company:	PROEL S.p.A.
Label:	AXIOM AX Series
Position:	X=0.00 m Y=0.00 m Z=0.80 m
Orientation:	Hor=0.0° Ver=0.0°
Weight:	96,00 kg
Setup:	AX2065 StackBar
Box Count:	4
Pinpoint Mode:	No Pinpoint



	Box Type	Gain	Rigging Angle	Aiming Angle
Box 4	AX2065 STD	0.0 dB	0°	8.0°
Box 3	AX2065 STD	0.0 dB	1°	8.0°
Box 2	AX2065 STD	0.0 dB	2°	7.0°
Box 1	AX2065 STD	0.0 dB	5°	5.0°
	(Frame)			0.0°



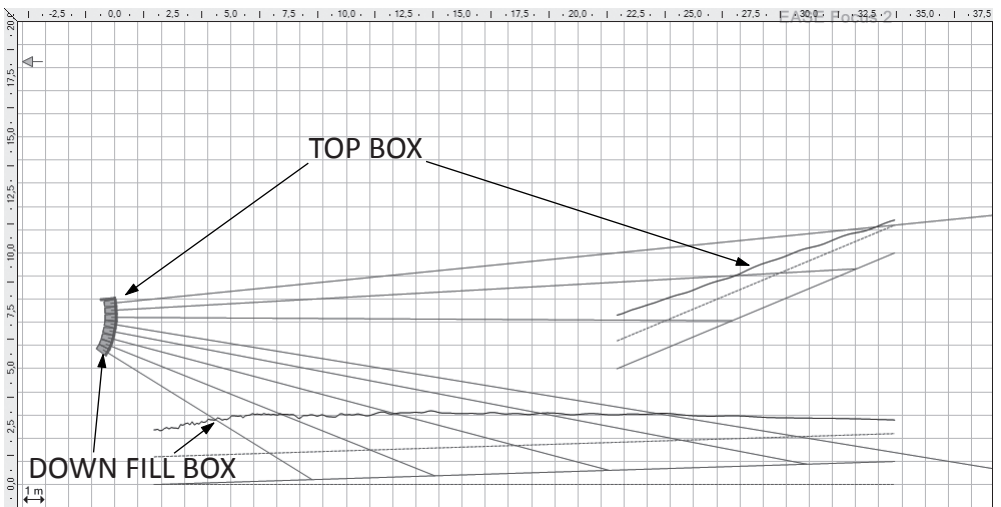


EXAMPLE OF INSTALLATION IN A THEATRE WITH BALCONY

Here below you can see an example of the use of different PRESETS in an AX2065 flown array installed in a big theatre with balcony. The TOP BOXES of the array are aiming at the balcony while the DOWN FILL box is aiming at the audience close to the stage.

TOP BOXES: the power level at the end of the balcony is lower, as well as the high frequency level.

DOWN FILL BOXES: the power level in the proximity of the stage is higher, as well as the high frequency level.



PRESET OPERATIONS

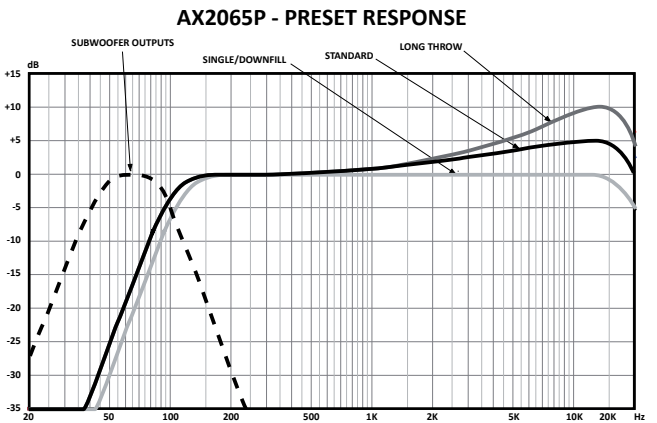
In order to optimize the array performances for this specific application, the PRESETS should be loaded in different PC260 loudspeaker processors used in the following way.

Load the STANDARD preset in the first PC260 processor that drives the amplifiers for the central boxes.

Load the LONG THROW preset in the second PC260 processor that drives the amplifiers for the TOP 1 or 2 boxes, in order to compensate the loss of power level and high frequencies of the program sent to the upper deck of the theatre. Load the DOWN FILL / SINGLE BOX preset in the third PC260 processor that drives the amplifiers for the BOTTOM box in order to smooth the high frequency content of the program sent to the audience close to the stage.

NOTE: the audio signal sent to all PC260 processors must be the same so their inputs must be linked with a XLR cable.

NOTE: The outputs 1 and 2 of each PC260 are assigned always to drive the amplifiers for the SW215 subwoofers, so you can use indiscriminately the output 1 and 2 of one of them.



IMPORTANT INSTRUCTIONS TO USE GROUPS

If you use more than one PC260 processor to drive the same vertical array system as in the example above, you must always set the same parameters of the input panel for both processors: levels and delay and any other parameter must be always the same. The right way to this is the following:

- 1) Be sure that each PC260 has not assigned to any device group.
- 2) Load the STANDARD, SINGLE/DOWN-FILL, LONG THROW preset on each dedicated PC260.
- 3) Assign every PC260 to the same device group.

Now any modification made on one PC260 is repeated also on all the others assigned to the same group.

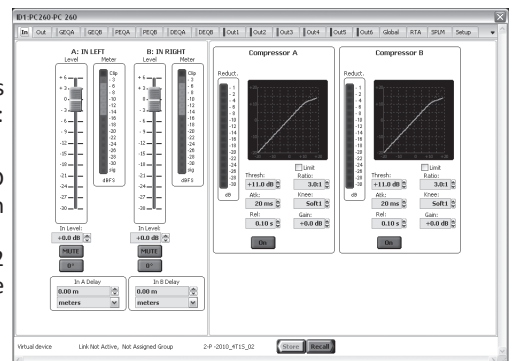


WARNING: After you have assigned all the PC260 to the same group, do not load or save preset, because what you do on one unit will be repeated also on the others (for load and save operations you must remove the units from the groups).

EDIT PARAMETERS

In the PC260 presets some parameters can be customized and some other are protected, this ensure a safe operation of the system. Here is a brief description of customizable parameters:

IN: In this screen you can adjust the input levels, compressors/limiters and delay. The input range can be optimized in the $-30 \div +6$ dB range. The level is set after the AD conversion, so if you have problems with an excessive input signal use the analog PAD button on the PC260 back panel. The compressors are set in order to attenuate very high input signals (the threshold is $+12$ dB), ensuring a more transparent musical behaviour of the system limiting. If needed, the compressor threshold can be freely adjusted.





OUT: in this page you can see the level of the output signals and the gain reduction if the limiters are activated. You can also trim (± 6 dB) the output signals in order to adjust the balance of LF, MF and HF ranges.



WARNING!

The limiter setting of PC260 and 2065 preset is set for the use of 32 dB fixed gain power amplifiers: contact PROEL if you need a different setting. The delays are set for the optimal alignment of a standard flown configuration with the vertical array on top of the subwoofers.

If needed, the delay of the subwoofers (LOW-L and LOW-R) can be adjusted in relation to the MID-HIGH outputs for the optimal alignment when the system is installed in a different position.



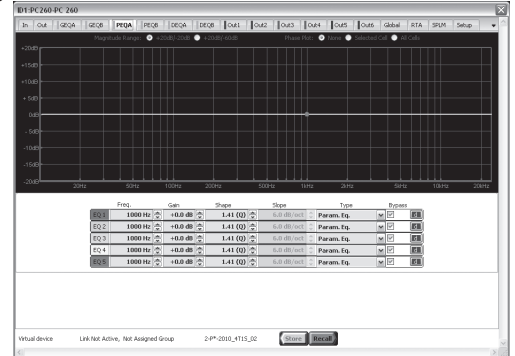
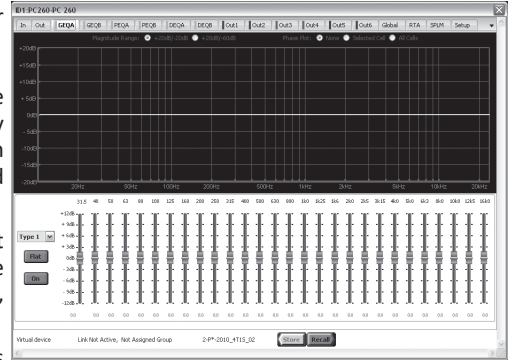
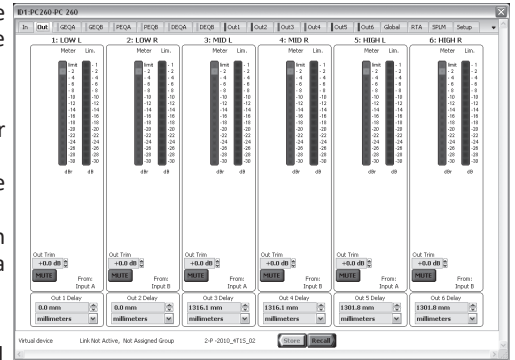
WARNING!

The DELAY difference between MID and HIGH outputs must always be 93 mm (HIGH after MID). If you modify the MID delay to align the tops with the subs, remember always to set the HIGH delay accordingly (+93 mm).

GEQ: this is the graphic equalizer on the processor inputs to be used for equalizing the whole system. It can be used for adjusting the system's response or for fixing particular frequency problems in the environment where the system is installed. The AX2065P preset has been prepared in order to obtain the best performance from the system, so we suggest to avoid extreme use of the GEQ.

PEQ: this is a full parametric 5-band equalizer on the processor's inputs. Each filters can be set also as shelving, notch, allpass, high-pass and lo-pass, so this equalizer can be used to optimize the system response according to the environment characteristics, including temperature, humidity and absorption due to the audience.

DEQ: in the 2065 presets the 3-band dynamic equalizer is used to optimize the system's response so we suggest to do not change its parameters and use it as it is already set.





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